

**Industrial 8-Port 10/100/1000T 802.3at PoE +
2-Port 100/1000X SFP Ethernet Switch**

IGS-1020PTF Series

User's Manual

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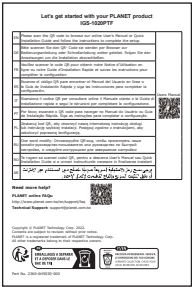


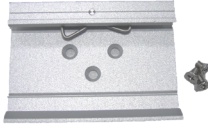

1. Package Contents

Thank you for purchasing PLANET Industrial 8-port 10/100/1000T 802.3at PoE + 2-port 100/1000X SFP Ethernet Switch, IGS-1020PTF or IGS-1020PTF-12V. The hardware specifications of these models are shown below:

Model Name	10/100/1000T 802.3at PoE+ RJ45 Ports	100/1000X SFP Slots	Power Input Range
IGS-1020PTF	8	2	DC 48~54V
IGS-1020PTF-12V			DC 12~54V

In the following sections, the term **“Industrial PoE+ Switch”** means the IGS-1020PTF or IGS-1020PTF-12V.

Open the box of the Industrial PoE+ Switch and carefully unpack it. The box should contain the following items:

Industrial PoE+ Switch x 1	QR code sheet x 1	SFP Dust Caps x 2
		
Wall-mount kit x 1	DIN-rail kit x 1	RJ45 Dust Caps x 8
		

If any of these are missing or damaged, please contact your dealer immediately; if possible, retain the carton including the original packing material, and use them again to repack the product in case there is a need to return it to us for repair.

2. Hardware Introduction

2.1 Switch Front Panel

The front panels of the Industrial PoE+ Switches consist of Ethernet interfaces and LED indicators as shown below:

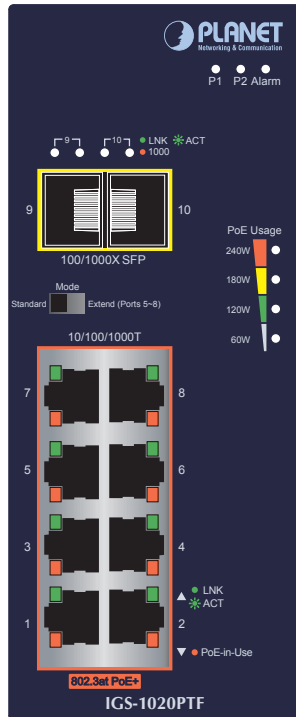


Figure 2-1:

IGS-1020PTF front panel

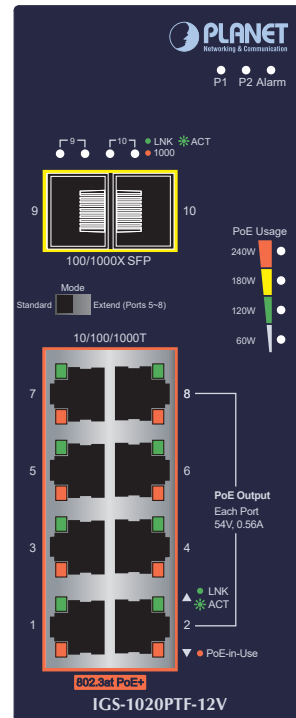


Figure 2-2:

IGS-1020PTF-12V front panel

■ Gigabit TP Interfaces (Port 1 to Port 8)

10/100/1000BASE-T copper, RJ45 twisted-pair: Up to 100 meters in standard mode.

■ Gigabit SFP Slots (Port 9 to Port 10)

100/1000BASE-X mini-GBIC slot, SFP (small factor pluggable) transceiver module: From 550 meters to 2 kilometers (multi-mode fiber) and up to 10/20/40/60/80/120 kilometers (single-mode fiber or WDM fiber).



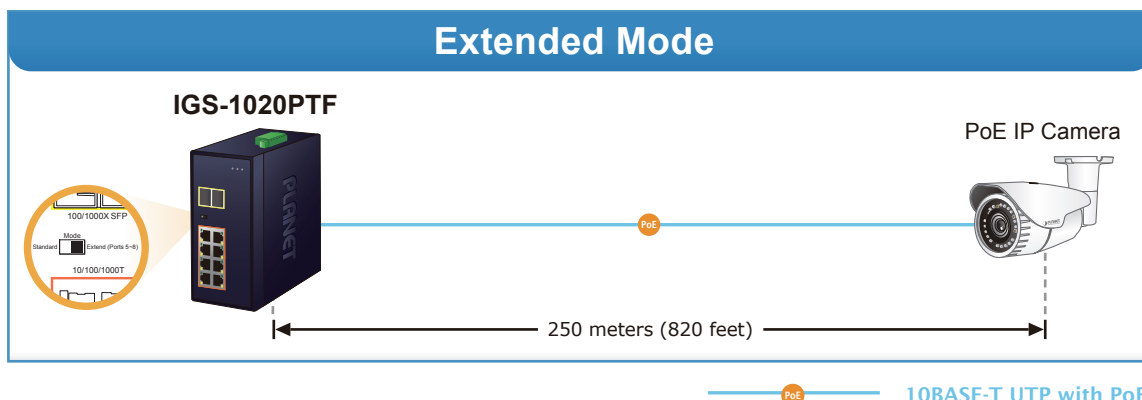
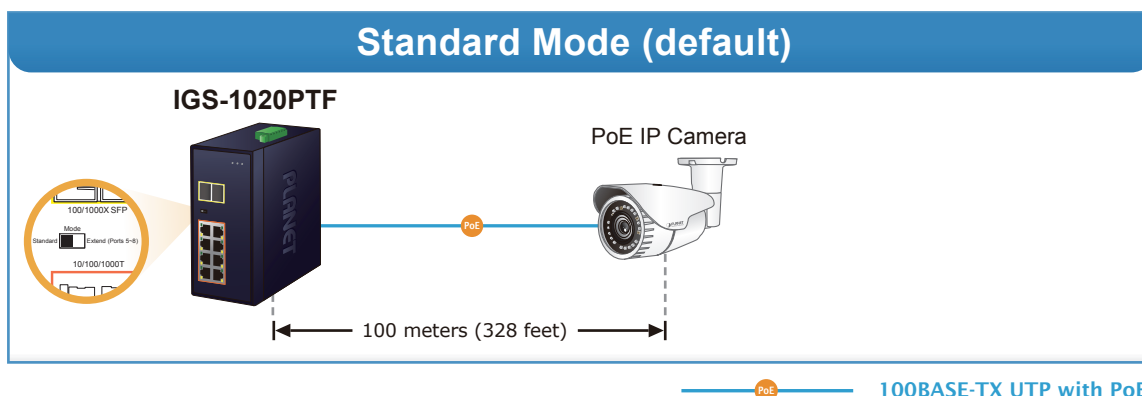
Note

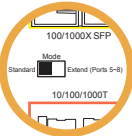
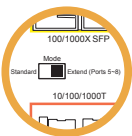
1. The PoE circuits are classified as ES1 circuits, and the function of the ITE, as outlined in IEC TR 62102, is considered not to be connected to an Ethernet Network with outside plant routing, including campus environment. The installation instructions clearly state that the ITE is to be connected only to PoE networks without routing to the outside plant.
2. The output voltage and current for the PoE circuits are 30W (max.).
3. If optical transceivers are used to be connected to SFP connector, only CDRH certified Laser Class I optical transceiver shall be used.

■ DIP Switch for Port 5 to Port 8

The Industrial PoE+ Switch has a built-in solid DIP switch that provides **“Standard”** and **“Extend”** operation modes. The Industrial PoE+ Switch operates as a normal IEEE 802.af/at PoE+ Switch in the **“Standard”** operation mode.

In the **“Extend”** operation mode, Port 5 to Port 8 of the Industrial PoE+ Switch operate on a per-port basis at 10Mbps full duplex operation but can support 20~25-watt PoE power output over a distance of up to 250 meters overcoming the 100m limit on Ethernet UTP cable. With this feature, the Industrial PoE+ Switch provides an additional solution for 802.3af/at PoE+ distance extension.



DIP Switch Mode	Function
Standard 	DIP switch is off This mode makes the Industrial PoE+ Switch operate as a general switch and all PoE ports operate at 10/100/1000Mbps auto-negotiation.
Extended 	DIP switch is on This mode makes Port 5 to Port 8 of the Industrial PoE+ Switch operate on a per-port basis at 10Mbps full duplex operation but can support PoE power output over a distance of up to 250 meters overcoming the 100m limit on Ethernet UTP cable.



Note

After changing the DIP switch mode, please reboot the switch to take effect.

2.2 LED Indicators

■ System

LED	Color	Function
P1	Green	Lights: Indicates power 1 has power.
P2	Green	Lights: Indicates power 2 has power.
Alarm	Red	Lights: Indicates either power 1 or power 2 has no power.
60W	Amber	Off: Indicates the PoE usage is less than 30W. Blinks: Indicates that the PoE usage is around 31W to 59W. Lights: Indicates the PoE usage is around/over 61W to 89W.
120W	Amber	Blinks: Indicates that the PoE usage is around 91W to 119W. Lights: Indicates the PoE usage is around/over 121W to 149W.
180W	Amber	Blinks: Indicates that the PoE usage is around 151W to 179W. Lights: Indicates the PoE usage is around/over 181W to 209W.
240W	Amber	Blinks: Indicates that the PoE usage is around 211W to 239W. Lights: Indicates the PoE usage is at the maximum.

■ 802.3at PoE+ 10/100/1000BASE-T Interfaces (Port 1 to Port 8)

LED	Color	Function
LNK/ACT	Green	Lights: Indicates the link through that port is successfully established at 10Mbps, 100Mbps or 1000Mbps. Blinks: Indicates that the switch is actively sending or receiving data over that port.
PoE-in-Use	Amber	Lights: Indicates the port is providing DC in-line power. Off: Indicates the connected device is not a PoE powered device (PD).

■ 100/1000X SFP Slots (Port 9 to Port 10)

LED	Color	Function
LNK/ACT	Green	Lights: Indicates the link through that port is successfully established at 1000Mbps or 100Mbps. Blinks: Indicates that the switch is actively sending or receiving data over that port.
1000	Amber	Lights: Indicates the link through that port is successfully established at 1000Mbps. Off: Indicates the link through that port is not established or is established at 100Mbps.

2.3 Switch Upper Panel

The upper panel of the Industrial PoE+ Switch consists of one terminal block connector within two power input and one relay output.

Figure 2-3 shows the upper panel of the IGS-1020PTF.

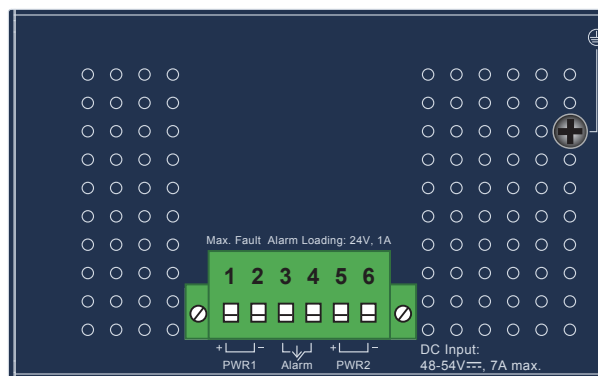


Figure 2-3: IGS-1020PTF Upper Panel

Figure 2-4 shows the upper panel of the IGS-1020PTF-12V.

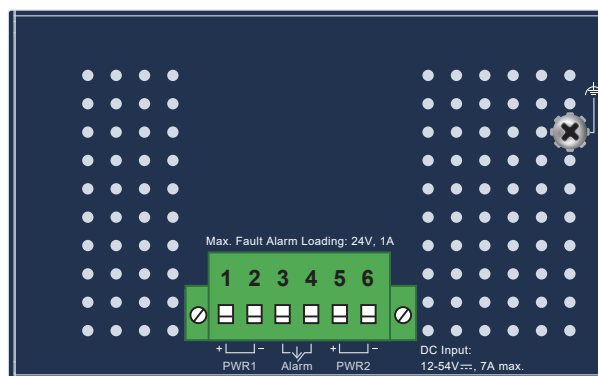


Figure 2-4: IGS-1020PTF-12V Upper Panel

2.4 Wiring the Power Inputs

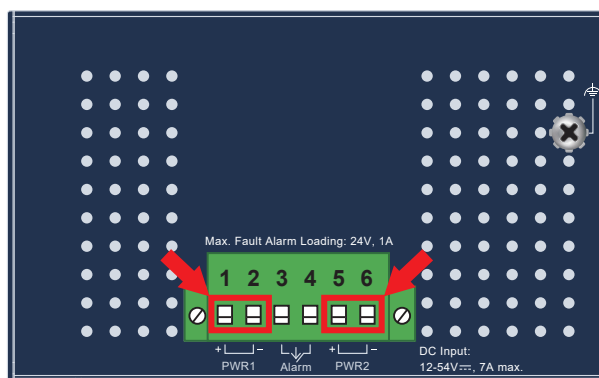
The 6-contact terminal block connector on the top panel of Industrial PoE+ Switch is used for two DC redundant power inputs. Please follow the steps below to insert the power wire.



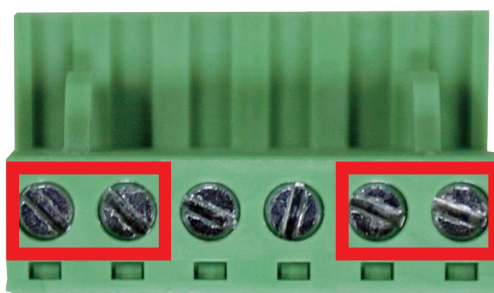
Caution

When performing any of the procedures like inserting the wires or tightening the wire-clamp screws, make sure the power is OFF to prevent from getting an electric shock.

1. Insert positive and negative DC power wires into Contacts 1 and 2 for Power 1, or Contacts 5 and 6 for Power 2.



2. Tighten the wire-clamp screws for preventing the wires from loosening.



1	2	3	4	5	6
Power 1		Alarm		Power 2	
+	-			+	-



Note

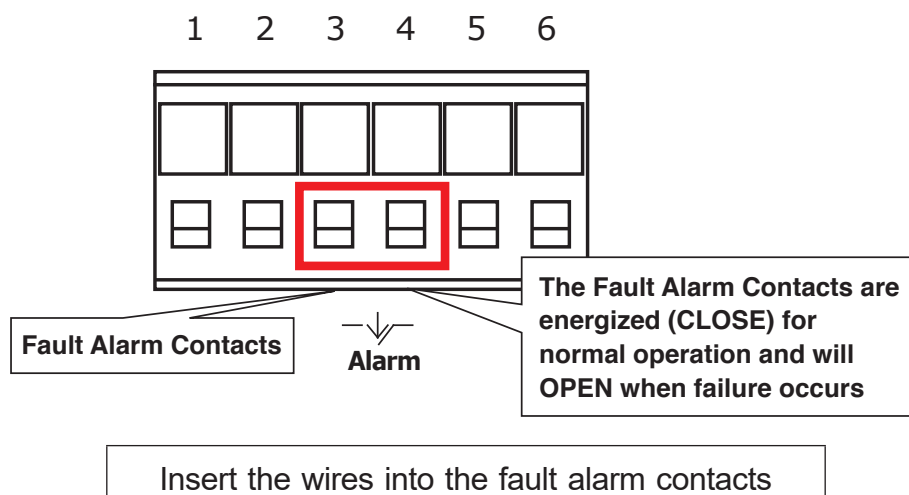
1. The power input terminal block should be installed using 12-24 AWG wires. The wiring for the power input terminal block must be installed by a skilled person. Wire type: Cu, TQ Lb In.: 5
2. The **IGS-1020PTF-12V** supports DC input range of 12V to 54V. To avoid damage, please use the IGS-1020PTF-12V under its specification.
3. PWR1 and PWR2 must provide the same DC voltage while operating with dual power input.

DC Input	Max. PoE Budget
12V	60W
24V	120W
54V	240W

4. Please follow the table above for DC input in relation with maximum PoE budget.
5. Based on the manufacturer's product specifications, this unit is intended to be supplied by a UL-listed power supply suitable for use at a minimum temperature of 75 °C, a rated output of 12 to 54V DC, and a minimum current of 7 A.
6. The power cord must be connected to a socket or outlet with a ground connection.

2.5 Wiring the Fault Alarm Contact

The fault alarm contacts are in the middle of the terminal block connector as the picture shows below. Inserting the wires, the Industrial PoE+ Switch will detect the alarm status of the power failure and then forms an open circuit. The following illustration shows an application example for wiring the fault alarm contacts.



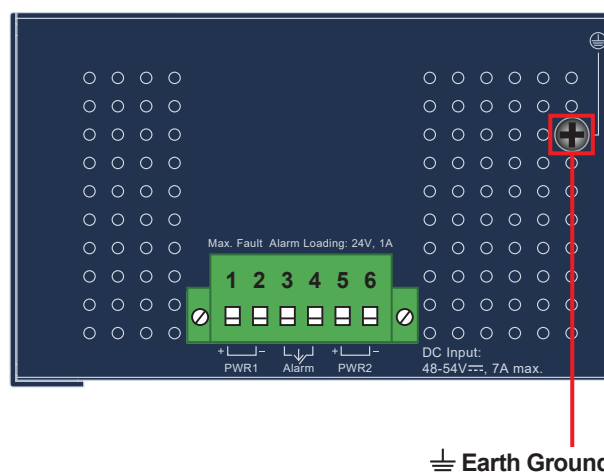


Note

1. The wire gauge for the terminal block should be in the range between 12 and 24 AWG.
2. Alarm relay circuit accepts up to 24V with a maximum current of 1A.

2.6 Grounding the Device

Users **MUST** complete grounding wired with the device; otherwise, a sudden lightning could cause fatal damage to the device.



Note

EMD (Lightning) DAMAGE IS NOT COVERED UNDER WARRANTY.

3. Installation

This section describes the functionalities of the Industrial PoE+ Switch's components and guides you to installing it on the DIN-rail and wall. Basic knowledge of networking is assumed. Please read this chapter completely before continuing.

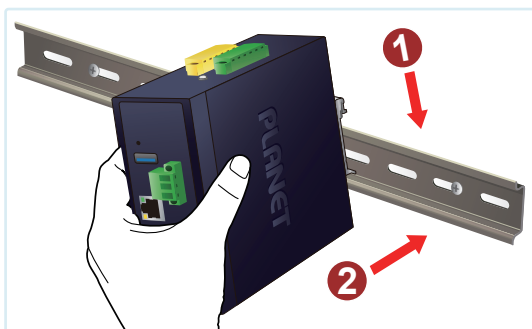
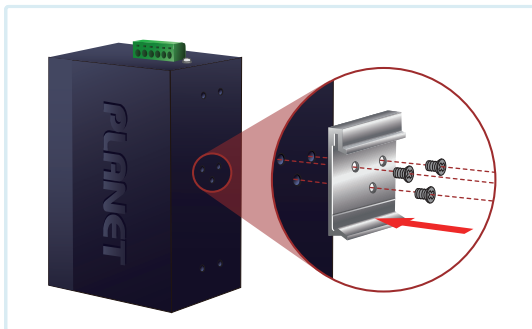


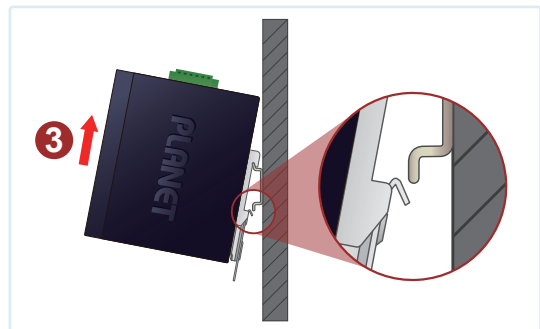
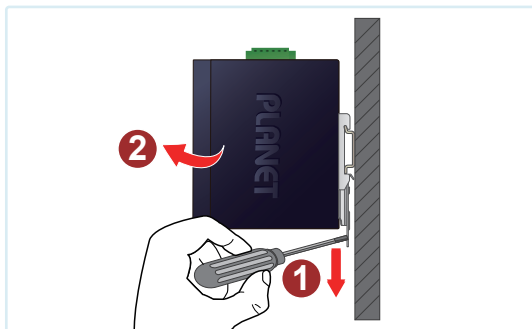
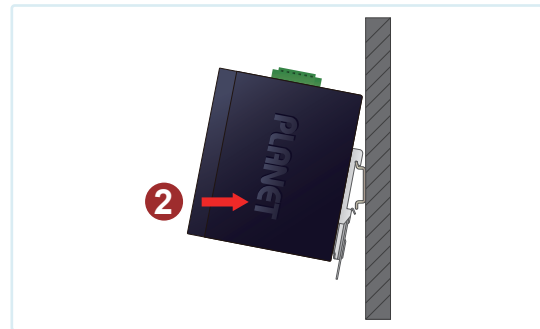
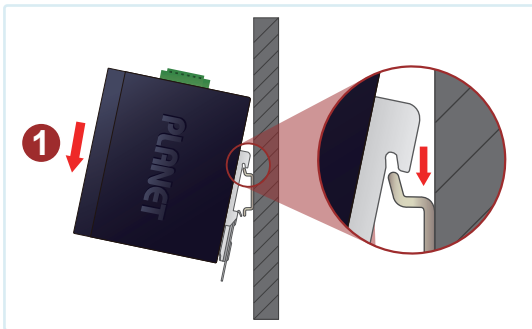
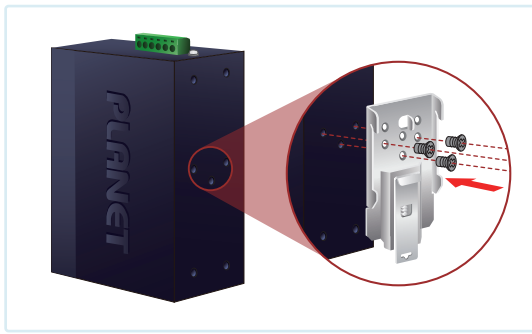
The installation procedures of the IGS-1020PTF and IGS-1020PTF-12V are the same as those shown below.



Restricted Access Area: The equipment should only be installed in a restricted access area.

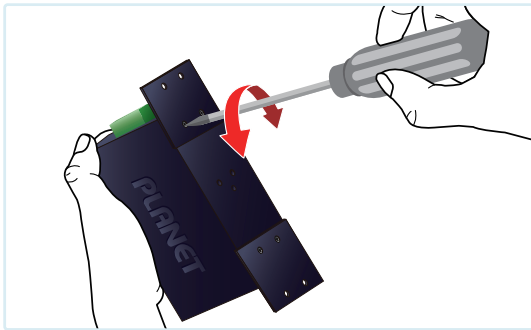
3.1 DIN-rail Mounting Installation



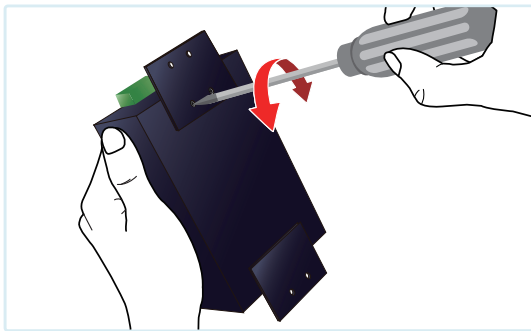


DIN-rail Mounting Installation

3.2 Wall-mount Plate Mounting



3.3 Side Wall-mount Plate Mounting (for IGS-1020PTF only)



Mount on product or wall (Screw size and quantity: 4mm (L), 3mm (dia.) and 4pcs); DIN-rail mount on product (Screw size and quantity: 4mm (L), 3mm (dia.) and 3pcs).

4. Product Specifications

Model	IGS-1020PTF	IGS-1020PTF-12V
Hardware Specifications		
Hardware Version	2	
Copper Ports	8 10/100/1000BASE-T RJ45 auto-MDI/MDI-X ports	
PoE Injector Ports	8 ports with 802.3at PoE+ injector function (Ports 1 to 8)	
SFP Slots	2 1000BASE-SX/LX/BX SFP interfaces (Ports 9 to 10) Compatible with 100BASE-FX SFP	
Connector	Removable 6-pin terminal block Pin 1/2 for Power 1; Pin 3/4 for fault alarm; Pin 5/6 for Power 2	
DIP Switch	Standard/Extend mode (Extend mode for Port 5 to Port 8 only)	
LED Indicators	3 x LED for System and Power: <ul style="list-style-type: none"> ■ Green: DC Power 1 ■ Green: DC Power 2 ■ Red: Power Fault Alarm 8 x LED for PoE Copper Port (Port 1 to Port 8): <ul style="list-style-type: none"> ■ Green: LNK/ACT (10/100/1000Mbps) ■ Amber: PoE-in-Use 2 x LED for 100/1000X Fiber Port (Port 9 to Port 10): <ul style="list-style-type: none"> ■ Green: LNK/ACT (100/1000Mbps) ■ Amber: 1000Mbps 4 x LED for PoE Usage <ul style="list-style-type: none"> ■ Amber: 60W, 120W, 180W and 240W 	
Power Requirements	48~54V DC, 6A (max.)	12~54V DC, 6A (max.)
Power Consumption <ul style="list-style-type: none"> ● System max. ● Ethernet Full Loading max. ● Ethernet + PoE Full Loading max. 	5.6 watts/19BTU@54V DC input 7.28 watts/24BTU@54V DC input 265.1 watts/904BTU@54V DC input	5.6 watts/19BTU@54V DC input 8.4 watts/29BTU @54V DC input 265.1 watts/904BTU@54V DC input

Dimensions (W x D x H)	66 x 106 x 152 mm	77 x 106 x 152mm
Weight	837g	1133g
Enclosure	IP30 metal case	IP30 aluminum case
Installation	DIN-rail/wall-mount/side wall-mount	DIN-rail/wall-mount
ESD Protection	6KV	
Switch Specifications		
Switch Architecture	Store-and-Forward	
Switch Fabric	20Gbps	
Throughput (packet per second)	14.8Mpps@64bytes	
Address Table	8K entries	
Buffer Memory	4M bits on-chip buffer memory	
Jumbo Frame	9Kbytes	
Flow Control	Back pressure for half duplex IEEE 802.3x pause frame for full duplex	
Power over Ethernet		
PoE Standard	IEEE 802.3at Power over Ethernet Plus/PSE	
PoE Power Supply Type	End-span	
Power Pin Assignment	1/2 (+), 3/6 (-)	
PoE Power Output	Per port 48~54V DC Max. 30 watts	Per port 54V DC Max. 30 watts
PoE Power Budget (max.)	240W maximum	240W maximum@54V DC 120W maximum@24V DC 60W maximum@12V DC
Max. Number of Class 3 PDs@25W	8	

Standards Conformance	
Regulatory Compliance	FCC Part 15 Class A, CE
Stability Testing	IEC 60068-2-32 (Free fall) IEC 60068-2-27 (Shock) IEC 60068-2-6 (Vibration)
Standards Compliance	IEEE 802.3 Ethernet IEEE 802.3u Fast Ethernet IEEE 802.3ab Gigabit Ethernet IEEE 802.3z Gigabit Ethernet over Fiber Optic IEEE 802.3az Energy Efficient Ethernet (EEE) IEEE 802.3at Power over Ethernet Plus IEEE 802.3af Power over Ethernet
Environment	
Temperature	Operating: -40~75 degrees C Storage: -40~85 degrees C
Humidity	Operating: 5~90% (non-condensing) Storage: 5~90% (non-condensing)

Customer Support

Thank you for purchasing PLANET products. You can browse our online FAQ resource at the PLANET Web site first to check if it could solve your issue. If you need more support information, please contact PLANET support team.

PLANET online FAQs:

<https://www.planet.com.tw/en/support/faq>

Support team mail address:

support@planet.com.tw

FCC Warning

This equipment has been tested and found to comply with the regulations for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with this user's guide, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

CE Mark Warning

This device is compliant with Class A of CISPR 32. In a residential environment this equipment may cause radio interference.

WEEE Warning



To avoid the potential effects on the environment and human health as a result of the presence of hazardous substances in electrical and electronic equipment, end users of electrical and electronic equipment should understand the meaning of the crossed-out wheeled bin symbol. Do not dispose of WEEE as unsorted municipal waste and have to collect such WEEE separately.